

This listing of claims will replace all prior versions, and listings, of claims in the application.

Listing of Claims:

Subc 27
1. (currently amended) A method of communicating a data message via a transceiver using spread spectrum communications, each byte of the data message being communicated a predetermined number of times over a sequence of data channels by a transmitter, the method comprising:

transmitting a preamble over a predetermined number of preamble channels; and
transmitting the data message by communicating groups of data bytes that each comprise comprises a subset of the data message over the predetermined sequence of data channels,

B2
cont
wherein a number of bytes that comprises each group of data bytes is determined in accordance with a number of channels in the sequence of data channels and the predetermined number of times each byte of the data messages is to be transmitted.

2. (original) The method of claim 1, wherein the preamble is transmitted over a predetermined number of preamble channels for a period of time sufficient in duration such that a receiver may receive the preamble.

3. (original) The method of claim 2, wherein the preamble is concluded with a unique stop character and wherein the preamble is utilized to develop bit timing and hop frequency.

4. (original) The method of claim 2, further comprising investigating, at the receiver, the predetermined number of preamble channels to search for the preamble, each of the predetermined number of preamble channels being associated with a predetermined number of data channels in each sequence of data channels.

5. (currently amended) The method of claim 1, wherein the number of bytes that comprises each group of data bytes is such that a receiver can receive the entire data message when ~~[[at least]]~~ one of the data channels is blocked by interference.

6. (currently amended) The method of claim 1, wherein transmitting a preamble over a predetermined number of preamble channels further comprises transmitting a redundant preamble ~~over a second~~ together with said preamble channel.

7. (currently amended) The method of claim 6, further comprising:
investigating, at the receiver, the preamble channel; and
upon receiving ~~a first~~ the preamble, investigating the ~~second~~ redundant preamble channel to receive the redundant preamble.

8. (currently amended) The method of claim 7, wherein if the receiver does not receive the ~~second~~ redundant preamble, the method further comprising determining a hop frequency based on the ~~[[first]]~~ preamble to receive the data message over the predetermined sequence of data channels.

9. (currently amended) The method of claim 6, wherein when the receiver receives a unique stop character associated with the ~~second~~ redundant preamble, the method further comprising determining a hop frequency to receive the data message over the predetermined sequence of data channels.

10. (currently amended) The method of claim 6, wherein the preamble and ~~second~~ redundant preamble are transmitted over a predetermined number of preamble channels for a period of time sufficient in duration such that a receiver may receive the preamble and ~~second~~ redundant preamble.

11. (currently amended) The method of claim 10, further comprising, investigating, at a receiver, the predetermined number of preamble channels to search for the preamble and the ~~second~~ redundant preamble, each of the predetermined number of preamble channels being associated with a predetermined number of data channels in each sequence of data channels.

12. (original) The method of claim 1, wherein the data message comprise utility metering information, and wherein the transceiver resides in utility metering equipment.

13. (currently amended) A transceiver for use in a frequency hopping spread spectrum communication system, comprising:

a microcontroller;

a transmitter comprising a voltage controlled frequency generator and a power amplifier;

a receiver comprising an amplifier, a mixer, an IF amplifier, a demodulator, and a data slicer,

wherein when the transceiver is transmitting, the transmitter communicates a preamble over a predetermined number of preamble channels, and thereafter ~~[[communicate]]~~ communicates groups of data bytes that each ~~[[comprise]]~~ comprises a subset of the data message over a predetermined sequence of data channels,

wherein when the transceiver is receiving, the receiver investigates the predetermined number of preamble channels to search for the preamble, each of the predetermined number of preamble channels being associated with a predetermined number of data channels in each sequence of data channels, and

wherein a number of bytes that comprises each group of data bytes is determined in accordance with a number of channels in the sequence of data channels and a predetermined number of times each byte of the data message is to be transmitted.

14. (currently amended) The apparatus of claim 13, wherein the number of bytes that comprises each group of data bytes is such that a receiver can receive the entire data message when ~~[[at least]]~~ one of the data channels is blocked by interference.

15. (currently amended) The apparatus of claim 13, wherein transmitting preamble over a predetermined number of preamble ~~[[channel]]~~ channels comprises transmitting a redundant preamble ~~over a second together with said preamble channel~~.

B2
Cont

16. (currently amended) The apparatus of claim 15, wherein a receiver investigates the preamble channel, and upon receiving the preamble, the receiver investigates the ~~second~~ redundant preamble channel to receive the redundant preamble.

17. (currently amended) The apparatus of claim 15, wherein if the receiver does not receive the redundant preamble, the receiver determines a hop frequency based on the preamble to receive the data message over the predetermined sequence of data channels.

18. (currently amended) The apparatus of claim 15, wherein the preamble and ~~[[second]]~~ the redundant preamble are transmitted over a predetermined number of preamble channels for a period of time sufficient in duration such that a receiver may receive the preamble and ~~second~~ redundant preamble.

19. (currently amended) The apparatus of claim 15, wherein a receiver investigates the predetermined number of preamble channels to search for the preamble and the ~~second~~ redundant preamble, each of the predetermined number of preamble channels being associated with a predetermined number of data channels in each sequence of data channels.

DOCKET NO.: ABME-0739
Application No.: 10/037,357
Office Action Dated: August 15, 2003

PATENT

B9
cancel

20. (original) The apparatus of claim 13, wherein the data message comprises utility metering information, and wherein the transceiver resides in utility metering equipment.
